

ORIGINAL ARTICLE

BLOOD TRANSFUSIONS IN GYNAECOLOGY AND OBSTETRICS WARDS OF A TERTIARY CARE HOSPITAL

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Background: Blood transfusion is an important supportive tool in the management of gynaecological and obstetrical cases. The World Health Organisation stresses on the necessity of safe blood transfusion. The aim of this study was to describe the transfusion trends in Gynae and obstetrics patients admitted to Ayub Teaching Hospital, Abbottabad, Pakistan and to identify difficulty in transfusion. **Methods:** It was a hospital based cross sectional study carried out in gynae and obstetrics unit of Ayub Teaching Hospital, during a period of one month. 80 patients were admitted and enrolled in the study. Transfusion rates, indication for transfusion, source of blood, type of blood donor and ease of availability of blood were checked. **Results:** Out of 61 subjects, 37 (60.7%) received blood transfusion mostly for anemia. In 54 (88.5%) instances of blood transfusion, it was self-arranged and in 52 (85.2%) cases, blood was donated by family and friends. Most declared the arrangement of blood a difficult job 24 (39.3%). **Conclusion:** the transfusion rate in ATH is very high and mostly blood is donated by friends and family. There is a dire need for educating people to voluntarily donate blood to decrease the difficulty in blood arrangement.

Keywords: Blood transfusion, blood donation, gynaecology and obstetrics.

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INTRODUCTION

Blood transfusion is a process whereby blood or blood products are introduced intravenously from one individual to another individual's circulation.¹ A unit of blood contains 450 ml of blood and is collected from a single donor in a blood bag. This can be divided into different components and transfused to patients. Donation from a single donor can be given to many patients. Blood transfusion can thus consist of whole blood transfusion or individual component transfusion, i.e., RBCs, platelets, plasma, and cryoprecipitate depending on the requirement.^{2,3}

High income countries use blood transfusion as a supportive tool in the treatment of massive traumas, surgery and malignancies; whereas in low income countries blood transfusion is mostly done in the settings of pregnancy related complications, delivery, anaemia and trauma management.⁴

The reported transfusion rate in obstetrics varies from 0.16% to 2–6% with higher rates in women with abnormal labours and deliveries and the transfusion rate varies between 2.8%⁵ and 8.6%⁶ for gynaecological procedures.

Post-partum haemorrhage and severe anaemia⁷ (Hb <7g/dl) usually in the second half of pregnancy is a major indication for blood transfusion encountered in gynae and obstetrics.⁸ Obstetrical haemorrhage is another indication for blood transfusion.⁹ These haemorrhage cause death of almost 127,000 women yearly.¹⁰ Maternal Mortality

Rate is 275/100000 (PDHS 2007) in Khyber Pakhtunkhwa¹¹, which is higher than the average maternal mortality rate in Pakistan, i.e., 260 deaths per 100,000 live births.¹² Pakistan ranks among the nations with the highest maternal deaths in the region due to haemorrhage.^{7,13}

Transfusion is a life saving measure but irrational use of blood transfusion can cause side effects like rashes, shortness of breath, hypotension, haemolytic, non-haemolytic⁷ and febrile transfusion reactions, blood borne infection's transmission and hypersensitivity reactions.¹⁴ The results range from no or little morbidity to even death.^{15,16}

There has been a general increase in the trend of blood donation.¹⁷ Approximately 107 million blood donations are collected throughout the world yearly. Of these, half are collected from the high income countries homing 15% population of the world. Most developed countries have 100% voluntary non remunerated blood donations¹⁸, however the practice of family/ replacement and paid donation still persists widely especially in the developing countries like Pakistan.¹⁹ The yearly demand of blood transfusion in Pakistan is around 1.5 million bags of which 90% is provided by family and friends.²⁰

The WHO's (World Health Organisation) strategy for Safe Blood Transfusion stresses on the promotion of voluntary blood donation¹⁸, haemovigilance and national coordination of blood transfusion services. These strategies are effective

only if backed by research.¹⁹ The purpose of this research was to assess the magnitude of blood transfusion and the ease of availability of blood and blood products to women admitted in the Gynae and Maternity wards of ATH.

MATERIAL AND METHODS

This cross-sectional enrolled 80 patients admitted in Gynae and maternity wards of Ayub Teaching Hospital during the months of June and July 2013. Data was collected by the trained medical students using a structured questionnaire after obtaining informed consent. The study protocols and questionnaire were assessed and approved by the hospital ethical committee. Moreover, the information gathered was confirmed by tallying it with the patient's documents, laboratory reports and hospital blood bank records. Data was entered and analysed through SPSS-16.

RESULTS

Out of 80 patients admitted in Gynae wards during the study period, 61 (76.3%) patients received blood transfusion.

Out of these 61 patients who were transfused blood, 41 (67.2%) cases were admitted for obstetrical reasons; the rest 20 (32.7%) cases were admitted for gynaecological problems. Majority, 35 (57.4%) cases, who received blood transfusion were between 21-30 years and 43 (70.5%) of the cases were multiparous.

The rationale for blood transfusion as per the physician prescription was for having low Hb (less than 10.5 mg/dl) in 37/61 (60.7%) cases and in 23/61 (37.7%) cases for surgical intervention, i.e., caesarean-section. Among blood groups, B+ and O+ were transfused in 22/61 (36.1%) and 18/61 (29.5%) patients respectively. Table-1 shows the frequency of various blood groups among study subjects. Whole blood was transfused in 60/61 (98.4%) patients, and majority 50/61 (82%) were prescribed 1-2 units of whole blood for transfusion. Blood was donated by friends and family members in 52/61 (85.2%) of cases, and voluntary non-remunerated donation was observed in 9/61 (14.8%) patients.

Arrangement of blood was done by patients alone without hospital exchange in 88.5% of the times and blood was hospital exchanged in 9.8% cases. No blood units were purchased in any instance. However platelet concentrates were purchased from a private laboratory in one case 1/61 (1.6%).

Regarding difficulty in arranging the blood, 24/61 (39.3%) patients considered it difficult, while the process was extremely difficult for 10/61 (16.4%)

patients. The arrangement of blood was easy for 19/61 (31.1%) patients, and 8/61 (13.1%) patients perceived the process of arrangement as of moderate level.

Table-1: Frequency of blood groups

Blood Groups	Frequency	Percentage
A+	12	19.7
B+	22	36.1
AB+	8	13.1
O+	18	29.5
O-	1	1.63
Total blood units	61	100.0

DISCUSSION

Blood transfusion rate comes out to be 76.3% in our study, in 67.2% of cases blood was transfused in obstetrical settings. This is very high transfusion rate as compared to another study conducted in Karachi, Pakistan where the transfusion rate was 9.5% and 5.5% (pre-operative and post operative respectively) in obstetric setting.²¹ Another related study done in South-east Nigeria came up with transfusion rate of 7.04% in the settings of obstetrics²² this is higher than the transfusion rate in developed countries (transfusion rate: 0.16-2.6%) but still low than our transfusion rate. The reason for this could be due to a difference in time period of study, one year study in Nigeria and Agha Khan as compared to our one month study.⁹

Blood transfusion was done mostly in the cases of anaemia (60.7%) before delivery and in surgical intervention i.e. caesarean section (37.7%) in our study. A study from Africa²² shows the transfusion trend of 1-2 units of blood in 89% of cases, the study has elaborated the anaemia by dividing it into prepartum and postpartum anaemia. Our study did not make this differentiation. Therefore it is hard to suggest the cause for anaemia and whether the current practices are in accordance to the latest guidelines. However we suggest establishment of a hospital blood transfusion committee that will establish clear guidelines for blood transfusion.²³ Another study has explained the reason for transfusion in more details even dividing the caesarean section into primary and repetitive caesarean. The transfusion rate in caesarean delivery in our study is higher as compared to other studies conducted where the risk was very low^{21,22} and transfusion for anaemia correction was only 12%²⁴ in setting of obstetrics as opposed to our results. There is a dire need to audit the blood transfusion done in the hospital and the results have to be communicated to the head of the departments to ensure that the

patients are being transfused only if necessary.²⁵

Patients in our study were transfused whole blood in all cases whether it was transfusion due to anaemia or surgical intervention. Now the conventional whole blood transfusion is replaced by red cell component transfusion in developed countries, but the practice still persists in a developing country like Pakistan.^{26,27} Even with the availability of component therapy in tertiary care hospitals in Pakistan, the practitioners still adhere to the conventional whole blood transfusion practices. Individuals specialised in component transfusion should be involved in transfusion practices as per the new guideline on the administration of blood components.²⁵

Studies conducted by Mourant AE showed that B blood group has the highest frequency in Asian countries. Our study augments these historic findings of the study conducted in 1958. Results show B⁺ blood group as the most common and most required blood group in our study.^{28,29}

The patients getting blood transfusion are in age group of 20–30 years and multiparous women this observation is also seen in other studies from Africa and Agha Khan hospital Karachi.²² Patients were most frequently transfused with 1 to 2 units of blood, the frequency of 3 or more blood bag transfusion is low. This trend is also seen in other researches taken in the setting of obstetrics in the late 90's.³⁰

In our setting, the blood was donated mostly by friends and family of the patient no paid donor and a few voluntary donations were seen. This observation corresponds to the situation in our country where most of the blood donation requirement is met by the family and friends³¹, whereas the developed countries enjoy wide resource of voluntary non remunerated donations.¹⁹

Arrangement of blood was done by the patient and his family directly or through hospital exchange, there is no study to compare this trend of self arranged and hospital exchange trends in blood transfusion. A subjective response by patients to grade the ease of availability of blood resulted in 55.7% patients grading the process as very difficult and difficult. There is no study to compare the responses. Increasing the availability of blood decreases the maternal mortality associated with obstetrical procedure.^{31,32}

Blood donation and transfusion is a very important part of obstetrics and gynaecology. It affects the maternal health. This process has to be made better for safe and healthy mother and child.

CONCLUSION

The transfusion rate in ATH is very high. Anaemia and caesarean sections are the major contributor to transfusion requirement in Gynae/Obstetrics setting. Although blood was mostly donated by friends and family, but a reasonable proportion of the patients faced difficulties in arranging the blood. There is a dire need for educating people to voluntarily donate blood to decrease the difficulty in blood arrangement.

RECOMMENDATIONS

A larger and thorough study is required to assess the blood transfusion situation and more accurately in Public Sector hospitals of the country. Large scale studies in this area are required to help the planners and hospital managers to make evidence based decisions for ensuring a standardized, safe and easy blood transfusion services.

There is a dire need to address the current high transfusion rate and the reason behind it. Unnecessary blood transfusions have to be curbed. A set of clear guidelines based on international standards and local restrains must be developed that ensures maximum patients benefit. Regular audits on blood transfusion need to be carried out. All physicians prescribing blood should receive training in transfusion medicine. Regular workshops should be held for the practising doctors to apprise them of changing transfusion practices. A feasible way to achieve this in a tertiary care hospital is by the establishment of a hospital blood transfusion committee that will take charge of transfusion practices ensuring maximum patient satisfaction.

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